

# I/O Cards

## PIO-DA4U/DA8U/DA16U

Universal PCI, 14-bit 4/8/16-ch Analog Output Board



### Features ▶▶▶▶

- Universal PCI (3.3 V/5 V) interface
- Voltage output:  $\pm 10$  V
- Two pacer timer interrupt sources
- 16-ch 5 V TTL D/I
- D/I with pull-high and pull-low jumpers
- Card ID function
- 4-/8-/16-ch, 14-bit analog output
- Current output: 0 ~ 20 mA (sink)
- Double-buffered D/A latch
- 16-ch 5 V TTL D/O
- Software calibration
- Drop-in replacement for the PIO-DA4/DA8/DA16

### Introduction

The PIO-DA4U/DA8U/DA16U series cards (universal PCI versions) are compatible with the PIO-DA4/DA8/DA16 cards (PCI versions) and most users can replace the PIO-DA4/DA8/DA16 by PIO-DA4U/DA8U/DA16U directly without software/driver modification.

For the PIO-DA4U/DA8U/DA16U series, their voltage output range is from -10 V to +10 V, and their current output range is from 0 to 20 mA. In addition, PIO-DA4U/DA8U/DA16U series also feature the following advantages by ICP DAS's innovation:

#### 1. Accurate and easy-to-use calibration.

ICP DAS provides the software calibration instead of the manual calibration so that no jumpers and trim-pots are required anymore. The calibration information can be saved in EEPROM for long-term use.

#### 2. Individual channel configuration.

In other words, every channel can be individually configured as voltage output or current output!

#### 3. Card ID.

ICP DAS provides the card ID function for PIO-DA4U/DA8U/DA16U (version 1.1 or above). Users can set card ID for each card and then recognize them one by one when more than two boards are used in a computer.

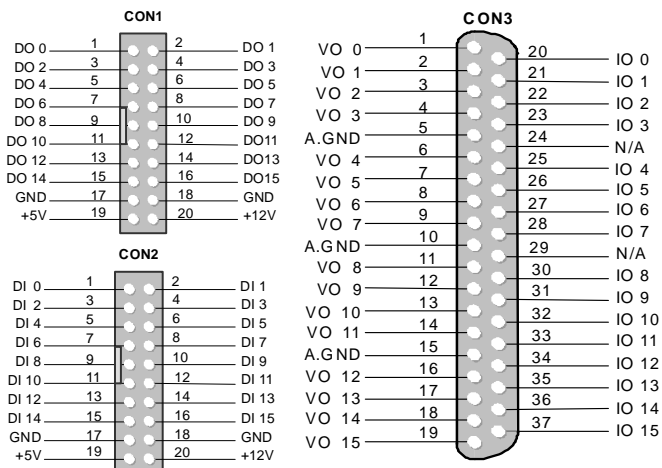
### Software

- DOS Lib and TC/BC/MSC sample program (with source codes)
- VB/VC/Delphi/BCB/VB.NET/C#.NET sample programs with source codes
- DLL and OCX SDK for 32-bit and 64-bit Windows XP/2003/Vista/2008/7
- Supports LabVIEW and Linux

### Hardware Specifications

Models	PIO-DA4U	PIO-DA8U	PIO-DA16U
<b>Analog Outputs</b>			
Channels	4	8	16
Resolution	14-bit		
Accuracy	0.01% of FSR $\pm 2$ LSB @ 25 °C, $\pm 10$ V		
Output Range	$\pm 10$ V, 0~20 mA		
Output Driving	$\pm 5$ mA		
Slew Rate	0.71 V/ $\mu$ s		
<b>Digital I/O</b>			
Channels	16-ch, 5 V/TTL		
Input Voltage	Logic 0: 0.8 V max., Logic 1: 2.0 V min.		
Output Voltage	Logic 0: 0.4 V max., Logic 1: 2.4 V min.		
Output Capability	Sink: 2.4 mA @ 0.8 V, Source: 0.8 mA @ 2.0 V		
Response Speed	1.0 MHz (Typical)		
<b>General</b>			
Bus Type	Universal PCI, 3.3 V and 5 V, 33 MHz, 32-bit, Plug and Play		
Connectors	Female DB37 x1, 20-pin box header x2		
Power Consumption	600 mA @ +5 V	800 mA @ +5 V	1400 mA @ +5 V
Operating Temperature	0 °C ~ +60 °C		
Storage Temperature	-20 °C ~ +70 °C		
Humidity	5 ~ 85% RH, non-condensing		

### Pin Assignments



### Ordering Information

Art. No. 12%-% PIO-DA4U CR	Universal PCI, 4-ch D/A Board (RoHS) Includes one CA-4002 D-Sub connector
Art. No. 12%-% PIO-DA8U CR	Universal PCI, 8-ch D/A Board (RoHS) Includes one CA-4002 D-Sub connector
Art. No. 12% (€) PIO-DA16U CR	Universal PCI, 16-ch D/A Board (RoHS) Includes one CA-4002 D-Sub connector

For latest driver update information please refer to [www.spectra.de/driver](http://www.spectra.de/driver)